THE

SCENOGRAPH

MANUAL,

CONTAINING

CONCISE DIRECTIONS FOR PRODUCING

CABINET AND STEREOSCOPIC VIEWS

AT HOME OR ABROAD WITH THE SCENOGRAPH,

The Lightest and most portable Pocket Camera ever constructed.

LONDON:

THE SCIOPTICON COMPANY,

157, GREAT PORTLAND STREET, W.

INTRODUCTION.

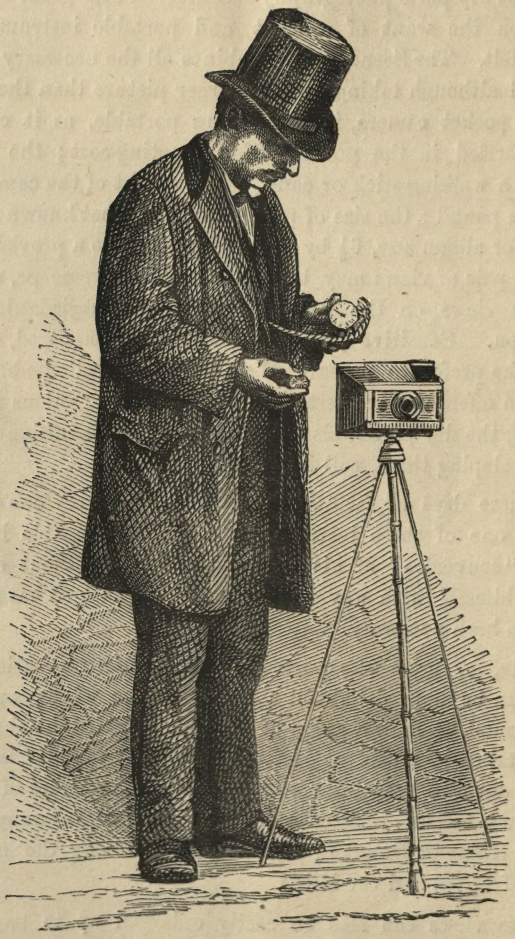
Now that dry-plate photography has arrived at a great state of perfection the want of a light and portable instrument is greatly felt. The Scenograph combines all the necessary qualities, and although taking a much larger picture than the usual tourist's pocket camera, is even more portable, as it can be easily carried in the pockets of a shooting-coat; the stand forming a walking-stick or cane. The weight of the camera is only one pound; the size of picture taken is that known as the cabinet or album size, $6\frac{1}{2}$ by $4\frac{1}{4}$. There is also a provision by which a pair of views may be taken for the stereoscope, or two separate views on the same plate for the magic-lantern or sciopticon. Sensitive plates are sold ready prepared, or for those who prefer to prepare their own the collodio-bromide emulsion offers the greatest facilities. Full directions for developing the dry plates, also for preparing the emulsion-plates and developing them, will here be found.

In these days of facilities for travelling, every one should possess one of these instruments, which will enable him to secure "souvenirs" of his rambles, and that without encumbering himself with any bulky apparatus, such as has always hitherto been necessary.

Again, for those who possess a magic-lantern or sciopticon what can be more delightful than, when the winter evenings come round, to show a party of friends assembled the charming scenes taken by ourselves during our holiday rambles, whether amidst our own beautiful scenery—Wales, the Lakes of Westmoreland, Ireland, or Scotland, or further away in sunny Italy; by the Rhine or Danube; or, further yet, among the majestic ruins of Egypt and the Nile?

These views can also be easily enlarged up to twelve or fifteen inches without losing much of their sharpness and effect, and thus form suitable pictures for framing.

Fig. 1



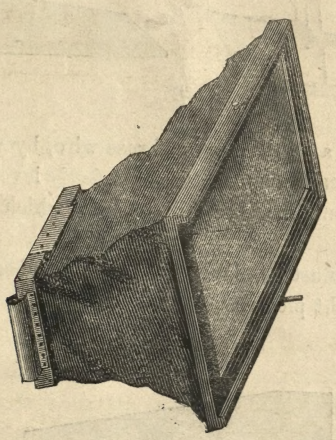
The Scenograph in action.

DESCRIPTION OF THE SCENOGRAPH.

THE SCENOGRAPH, as shown in Fig. 1, is composed of five separate parts, as follows :—

1st. The camera fitted with lens.
2nd. The support, with ball and socket joint.
3rd. The walking-stick stand.
4th. The dark slides.
5th. The ground glass.

FIG. 2.



THE CAMERA.

This is comprised in four separate pieces, the camera itself being formed of two wooden frames of different dimensions, united by a conical bag of black material, impenetrable to rays of light, and covered with black silk (Fig. 2). The large frame receives the focussing-glass and the dark slides, which, when in use, are held in place by a brass spring. The small frame

holds the objective, which is mounted in a movable slide, so that in taking stereoscopic views the lens may be moved from one side to the other, or be placed in the centre for taking the full-sized or cabinet picture. The lateral movement of the sliding front, and consequently of the objective it carries, is arrested by pieces of thin leather, which also serve to close the openings. The lens is a single achromatic combination, and has an adjustment for focussing, and a set of diaphragms to obtain the greatest degree of sharpness of the image.

To distend the camera and give it perfect rigidity two movable plates are employed, Fig. 3 being the top one, and Fig. 4 the bottom.

FIG. 3.

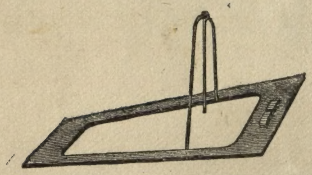


FIG. 4.

Fig. 3 carries a small piece of brass wire, by which it is easy to ascertain when the apparatus is perfectly level. The second piece (Fig. 4) contains a brass plate, into which the support is screwed.

These pieces must be placed on the sides where it is required to take an upright picture.

FIG. 5.

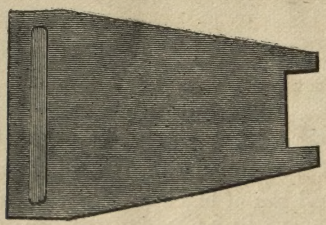


Fig. 5 represents the partition used in taking stereoscopic or magic-lantern views.

Fig. 6.

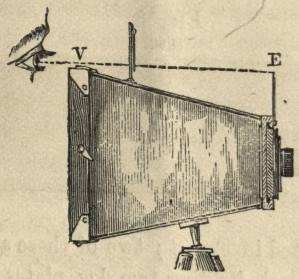
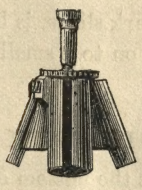


Fig. 6 represents the instrument mounted on the support, the small wire serving as a guide in taking stereoscopic views ; as by getting the small button at V and the point of E in a line, the same portion of view may be obtained, after changing the position of the camera.

Fig. 7.



THE SUPPORT.

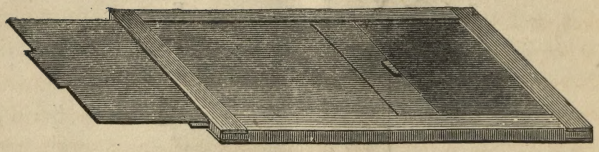
This is represented in Fig. 7, and is composed of a cone in brass, carrying three tubes attached to its sides; in the top is a ball and socket movement, which enables the camera to be placed at any angle, and which is held firmly in place by a screw beneath.

THE WALKING-STICK STAND.

This comprises three tubes entering one into another, the two inner ones being of brass, the outer having the appearance of an ordinary walking-cane.

THE DARK SLIDE.

FIG. 8.



This is represented in Fig. 8; two of these are supplied with each instrument, each holding two dry plates. To insert the plates, the sliding shutter is drawn completely out, and the plate laid face downwards in the recess, the piece of cloth being lifted up to allow the plate to lie beneath it. This small band of cloth answers a double purpose—it prevents the light from entering the frame, and also keeps the shutter from rubbing the glass.

THE GROUND GLASS.

This, as well as the dark slides, is held in place by the spring at the back, which fixes on to a small button at the top of the back frame.

METHOD OF WORKING WITH THE SCENOGRAPH.

Unscrew the ferule at the bottom of the stand, and take out the two brass tubes, replace the screw, and insert the tubes in their respective places in the brass support; place the different parts of the camera together by distending the body by the two plates; screw the camera on to the stand, and level it by adjusting the screw under the support. Insert the lens, and focus by means of a piece of black linen or cotton velvet thrown over the head; place the cover on the lens, detach the brass spring, and replace the ground glass by one of the slides holding the prepared plates. Draw the shutter out to the fullest extent, bend it back towards the camera, and slip the end into the brass groove which will be found on the front frame of the camera; this will prevent it from being blown by the wind. Cover the camera by throwing the focussing-cloth over it.

Expose by removing the cap for the time necessary, replace the cap, and shut the shutter of the dark slide.

The instrument can then be taken to pieces and placed in the pocket, and the brass rods inserted in the cane until the next view requires to be taken.

To take stereoscopic pictures the partition (Fig. 5) must be inserted, and the lens pushed to one side as far as it will go; when the point of view has been chosen, the exposure is given for one side of the plate, and the cap replaced. The instrument is then moved about 1 or 2 feet, having taken the precaution to note what object comes exactly in a line with the piece of wire attached to the lens mount and the button, as in V, Fig. 6. The instrument must then be so adjusted as to take in exactly the same view on the other side of the plate, the lens pushed to the opposite extremity, and the second exposure given. Make it a rule always to begin with the same side of the plate, whether taking stereoscopic views or two-lantern pictures on the same plate, say the right hand. In this case, after moving the camera to its second position, slide the lens over to the left. So for the dark slides—always take them in their regular order, 1, 2, 3, 4; by this means you will save the disappointment of finding that you have taken two negatives on the same glass, and so lost both. With each instrument will be found a small apparatus known as an iconometer, by holding this close to the eye a correct idea will be given of the amount of the view that will be included in the picture.

METHOD OF OPERATING WITH THE PREPARED DRY PLATES.

These plates are done up in packages of one dozen, and should only be opened at night, or in a thoroughly darkened room, by the light of a candle shielded by the coloured gelatine shade mentioned further on. The dark slides may be filled, and the remainder of the plates transferred to a plate-box, which should be kept in a dark cupboard wrapped in several thicknesses of black cloth. The cupboard or the box had better be locked, as an inquisitive person might (without knowing he

had done the least damage in the world) spoil the whole. Before placing them in the dark slides, it is as well to dust the plates gently with a broad camel's-hair brush. The method of inserting will be found under the head of the dark slide.

They are now ready for exposure, the necessary time of which will depend so much on the subject, and the amount of light at the time, that no definite instruction can be given. With a well lit-up subject, and the medium stop, from one to two minutes may be required; whereas such a subject as a shady wood might require ten or fifteen minutes. In focussing, it is best to remove all the stops, and see that the sharpest portion is about half-way between the centre and edges of the plate. The stops having been reinserted, and the exposure given, we now come to the development. This is best done at night, and with the candle shielded as before mentioned. The author, in his travels, always makes use of a sheet of gelatine of a non-actinic colour, which, when travelling, remains flat, but which can in a moment be made into a cylinder to place over the candle; and be as easily flattened when not in use. The materials necessary for the development are the following: —A white porcelain tray or dish, about 10in. by 8in. (an ordinary pie-dish will serve), a pneumatic holder, three small dropping-bottles, containing respectively:—

A. A solution of ammonia, 1 dram, to 1 ounce of water.

B. A solution of bromide of potassium, 20 grains to 1 ounce.

S. A solution composed of water, 1 ounce; nitrate of silver, 15 grains; citric acid, 15 grains.

Also three four-ounce bottles, containing—

No. 1. Methylated alcohol.

No. 2. A solution of pyrogallic acid, 8 grains, to 1 ounce of water.

No. 3. A solution of hyposulphite of soda, 1 part, to 6 of water.

Two egg-cups complete the articles necessary.

Take the plate carefully from the slide by removing the shutter, and tipping the plate back into the hand, taking care to only touch the edges; attach it to the pneumatic holder, and

pour over it enough of No. 1 to run to each corner. Allow this to remain on for half a minute, and then, after pouring it back into the bottle, wash the plate from a jug or tap till all greasiness disappears. Now, holding it level, and having previously about one-third filled one of the egg-cups with the solution No. 2, pour this over the plate, and watch carefully.

This is the critical moment; a correctly-timed negative may be spoilt, or an incorrectly-exposed one saved, by the treatment it now receives.

Let us suppose that the exposure has been correct. In a few seconds the image will begin to appear; first, the high lights, then the half tones, till in about a minute or two all, or nearly all, the details in the shadows become visible, the solution being kept in movement in all directions over the plate by gentle rocking. The details will be visible, but the negative will be lacking in force. Pour the solution back into the egg-cup, and add three or four drops of solution B, and pour again over the plate; return it again to the egg-cup, and add one drop of solution A. With each renewed application of the solution, from time to time adding one or two drops of A, the image will gain intensity, until a proper degree is reached.

Now, let us suppose that the exposure has been too long.

On application of the pyro solution the image will appear too quickly; pour back the solution at once; add six or eight drops of solution B; pour on and off, and add one drop of A. Continue the development for a short time (too long development at this stage would give a flat picture without contrast); wash the plate; fix it and dry it, and then recommence the development from the beginning with solutions 1 and 2, as before, but substituting five or six drops of solution S for A and B.

Use the other cup for the silver solution.

If the negative is under-exposed, the highest lights only will appear on application of the pyro solution. In this case add only one or two drops of the B solution, and drop by drop of A. The development will proceed slowly, but will bring out all the detail that is to be obtained.

A little experience will be the best guide, both as to time of

exposure and development. In any case never add more than one drop of A to commence with; more would produce stains. The author, however, prefers himself to stay the action of the solutions A and B with the pyro when all the details are well out, but density not sufficient; and then, by means of the pyro solution and five or six drops of S, to bring the picture up to a proper density. This having been arrived at, the plate should be again washed, and a small quantity of solution 3 poured over it from the bottle. This will gradually clear away the milky appearance. It must then be thoroughly well washed and set aside to dry. Solution 3 should never be used twice, but thrown away, and great care taken that none of it comes in contact with the cloths used for wiping the cups. The negative is now complete, and when dry is ready for varnishing, and in a few hours more for printing from. This the amateur can accomplish himself, but as there are so many facilities at the present day for getting prints from negatives at a cheaper rate than he could do them himself, he will, most likely, prefer to put them in the hands of a professional photographic printer.

THE EMULSION PROCESS.

To those who prefer to prepare their own plates this method offers the greatest facilities, as the plates can be coated when required; and by a simple method of transfer, used by the author in a late tour in Italy, six or a dozen glass plates will suffice to produce any number of negatives; these, as taken, are transferred to a prepared paper support and the glasses used over and over again. On arrival home the pictures are re-transferred from the paper support to glass, thus saving the transport of what in a long tour might become a heavy matter.

Besides the materials necessary for developing the plates, as described in the last article, the following will be necessary:— A bottle of emulsion, which must be kept carefully shielded from any but yellow light. When travelling, this is best kept in a wooden case, such as are sold by chemists. A small bottle, containing a weak solution of india-rubber in chloroform or

benzine, with a brush inserted in the cork; half or a dozen sheets of plate-glass the right size, a spirit-lamp, a small piece of sheet-iron, a few glass cloths, a piece of chamois leather, a number of sheets of transfer-paper, cut to size, and a slip of india-rubber let into a wooden frame, known as a squeegee.

PREPARATION OF THE PLATES.

If done in the daytime the room should be made perfectly dark, and a candle with the yellow shield employed, the same as at night. The plates, having been well washed with a piece of flannel in water, are dried on a clean cloth, and then polished with the wash-leather, both cloths and leather being kept strictly for this purpose, and scrupulously clean. The plate is then taken by the corner, or held with the holder, and the brush, charged with the india-rubber solution, passed along each edge. This dries instantaneously, and the plate is ready to receive the coating of emulsion. The spirit-lamp (that known as the "rechaud" is best) is lighted, and a piece of sheet-iron placed over it. The plate is now coated with the emulsion, which requires some care to prevent streaks, practice alone enabling the operator to obtain a perfectly even coating. After allowing about half a minute for the film to set, it is held over the heated sheet of iron at such a distance that it will not get too hot, and will be dry in two or three minutes. It is then placed in the slide, and is ready for exposure, but as an additional precaution, it may have a second band of india-rubber run round it. This makes the film secure from leaving the glass; also, from its greasy nature, prevents the after-solutions used in developing from running over the edge and staining the fingers. It is best to have two emulsion-bottles—one to receive the surplus solution, which, when full, may be filtered back into the other. The author, when away from home, employs for this purpose a very simple filter made of a piece of note-paper twisted into a conical form, and held in that position by a pin, a piece of clean cotton being lightly inserted. When done with the funnel can be thrown away. In time the emulsion will get too thick; a sufficient quantity of ether, two

parts, and alcohol one part, should then be added to bring it to its original state. This should be done just before filtering.

The development of the emulsion-plates being substantially the same as for the prepared dry-plates, need not be again described.

TRANSFERRING THE EMULSION NEGATIVES TO PAPER.

Lay the negative, when dry, in a basin of water, and at the same time a piece of the transfer paper with the prepared side downwards; in half a minute lift up the glass and paper together, and lay them on a flat surface; remove the surplus water by rubbing over with the squeegee. In the course of half an hour (and while still damp), on applying a knife to one corner the paper will come away, taking with it the negative film. The glass can then be washed ready for use again. When dry, the negatives should be kept in a book of soft paper occupying very little space, and may again be attached to plates of glass on the return home. This is done as follows:—Make a solution of gelatine of the strength of 1 ounce to 10 of water, and add about 3 grains of chrome alum, dissolve and filter. Coat glasses of same size as the original ones the negatives were taken on. When dry, proceed as before, laying the glass and the picture on the paper in a basin of water, withdrawing them after a space of half a minute has elapsed, and squeezing the surplus water away; allow to dry thoroughly, and then place in a dish of hot water: in a few minutes the paper will come away, leaving the negative attached to the glass as firmly as if it had never been removed. The author can confidently recommend this simple method of doing away with a weight of glass, having first tried it in Italy early this year without having had a single failure. This can rarely be said of any new method tried for the first time, and is a real proof of the thorough practicability of the method employed.

W. B. W.

W. B. Woodbury

PRICE LIST.

	£.	s.	d.
SCENOGRAPH, complete, for Cabinet and Stereoscopic pictures, comprising—the camera, the lens, the support, the walking-cane stand, two double-dark frames, the iconometer; the whole complete in a stained case, with handle	2	10	0
Prepared dry plates, in packages of 1 dozen	0	8	6
Collodio-bromide emulsion :—			
In 5 oz. bottles	0	5	6
In 10 oz. bottles	0	10	6
Wooden light tight cases, with stoppered bottles :—			
5 oz. size			
10 oz. size			
Plate boxes, to hold 1 dozen			
„ 2 „			
„ lock and key, 1 dozen			
„ „ 2 „			
Pneumatic holders	0	4	0
Yellow candle-shade	0	1	0
Dropping bottles, each	0	1	6
Porcelain trays	0	2	6
Drying racks, 12 grooves	0	4	0
Scales and weights (glass pans)	0	6	6
Glass measures, from	0	1	0
Transfer papers, per dozen	0	0	6
Patent plate glass, $6\frac{1}{2}$ by $4\frac{1}{4}$ in., per dozen	0	4	6
Polished crown glass „ „	0	2	3
Squegees			
India-rubber solution, per bottle	0	1	0
Gelatine, per oz.	0	0	6

	£.	s.	d.
Chrome alum, per bottle	0	0	6
Ammonia, per oz. bottle	0	0	9
Bromide of potassium, per oz. bottle	0	1	0
Nitrate of silver, per ½ oz. bottle	0	2	6
Pyrogallic acid „ „	0	2	6
Citric acid, per oz. bottle	0	1	0
Hyposulphite of soda, per bottle	0	0	6
Hard varnish, per bottle	0	1	6

WYMAN AND SONS, PRINTERS, GREAT QUEEN STREET, LONDON, W.C.